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Figure 1A-C

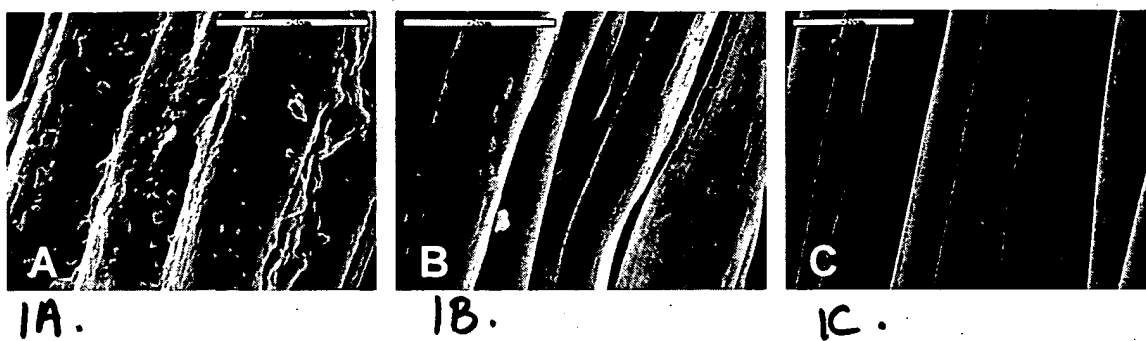


Figure 1D

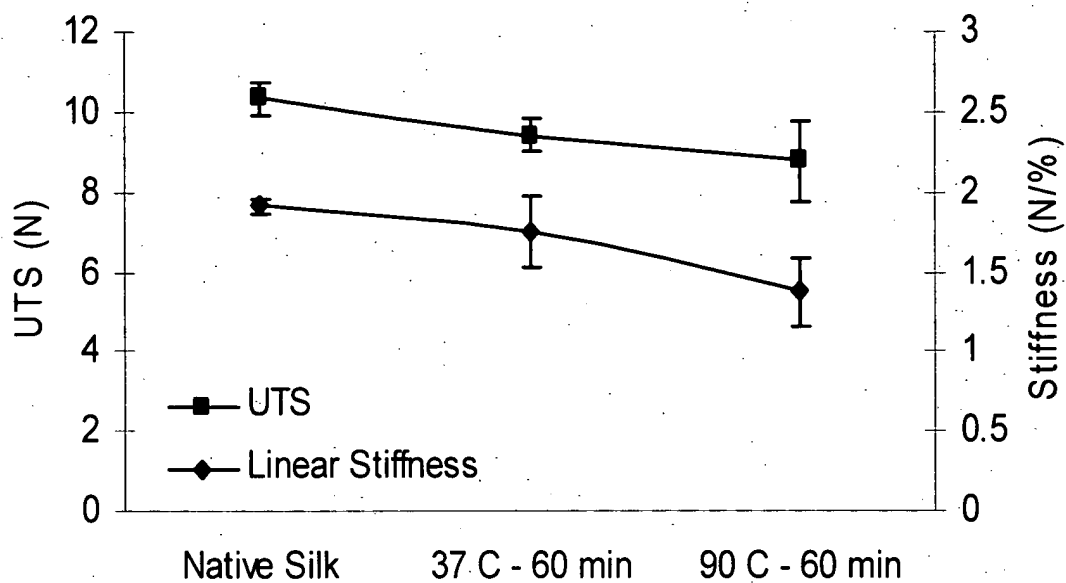
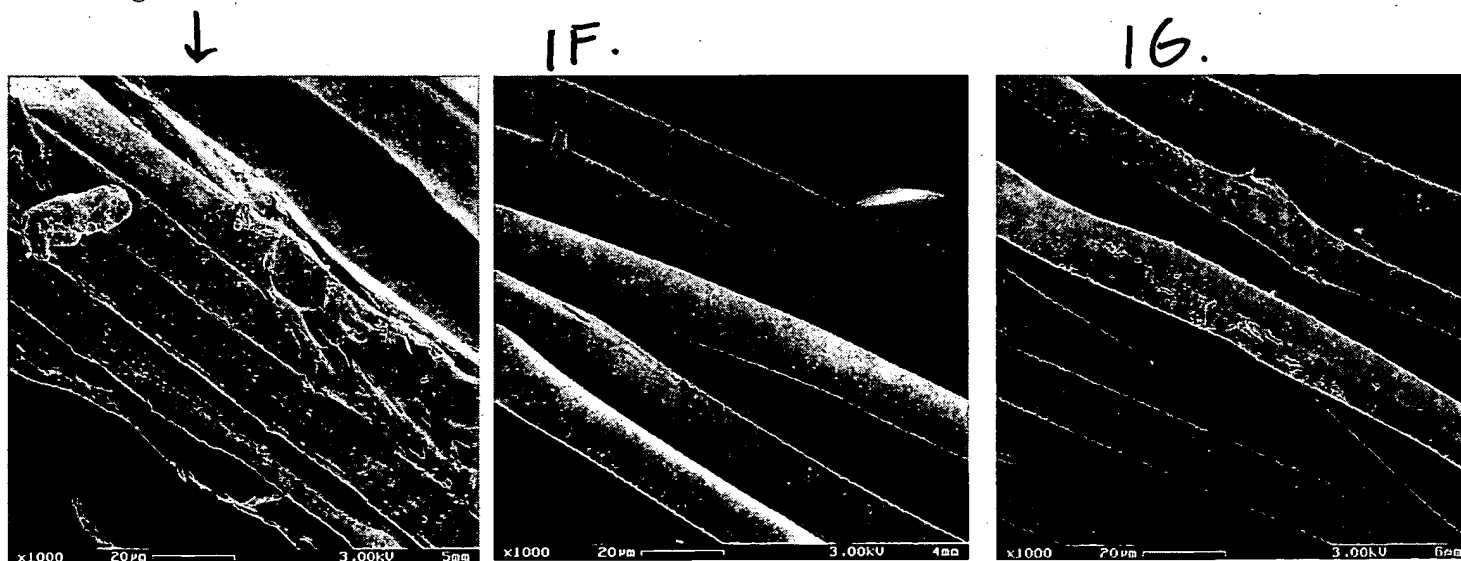


Figure 1E

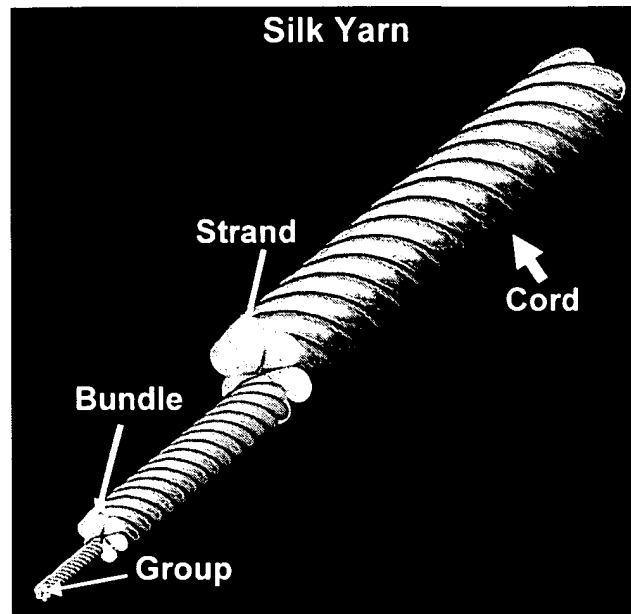


Raw Silk

1x Washed Silk

2x Washed Silk

**Figure 2A**



**Figure 2B**

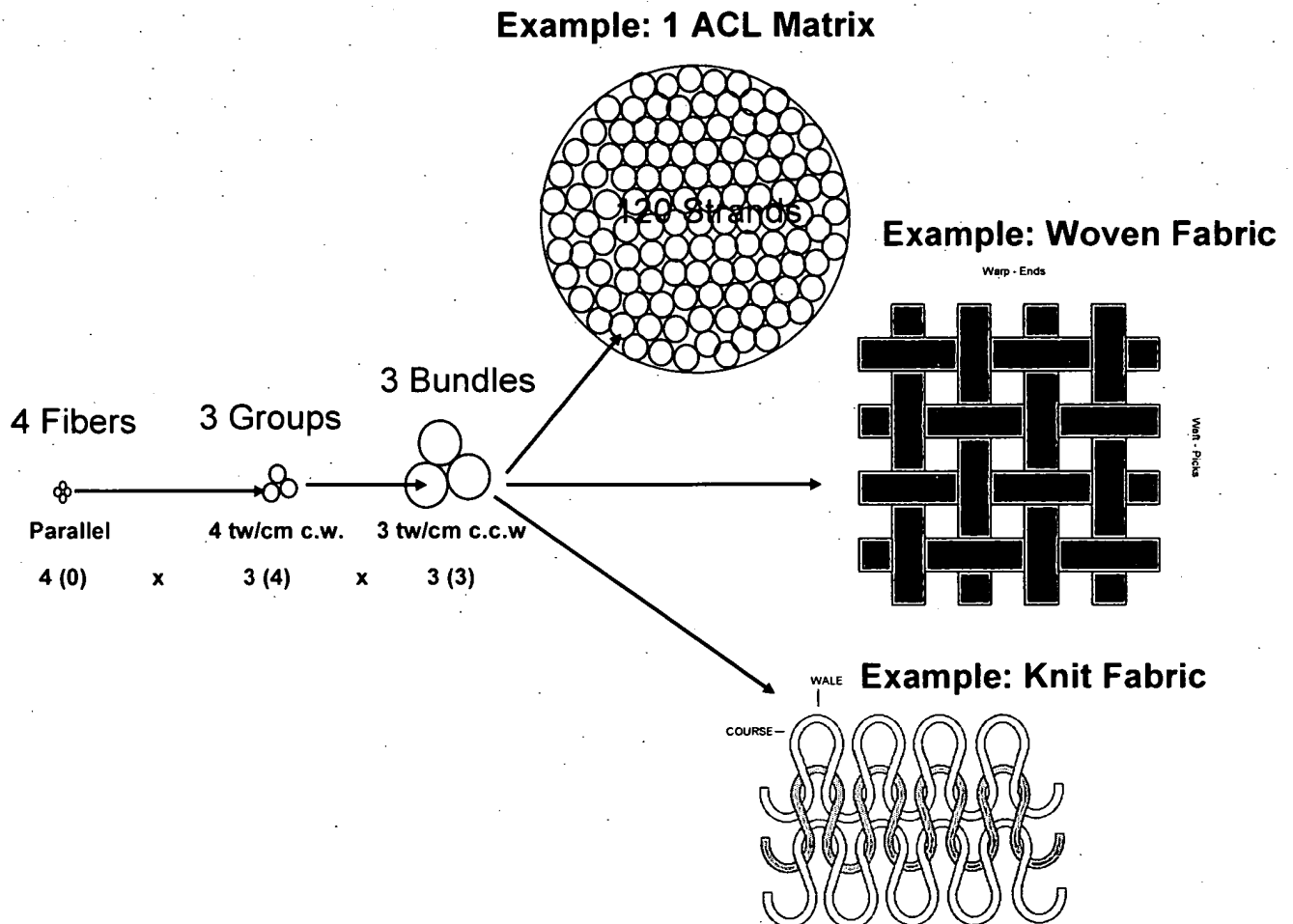


Figure 2C

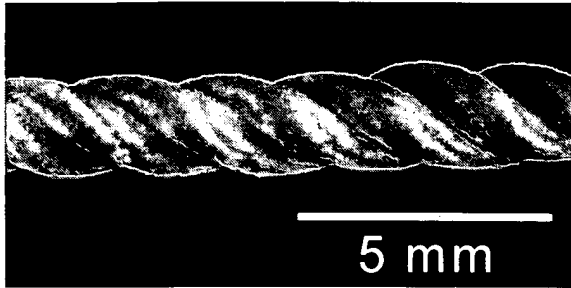


Figure 2D

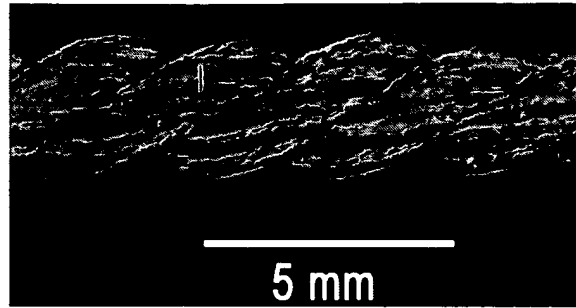
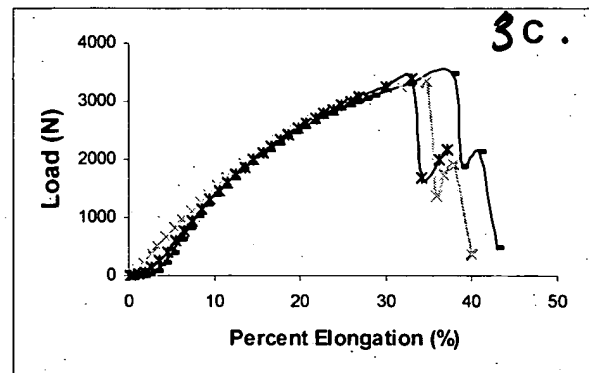
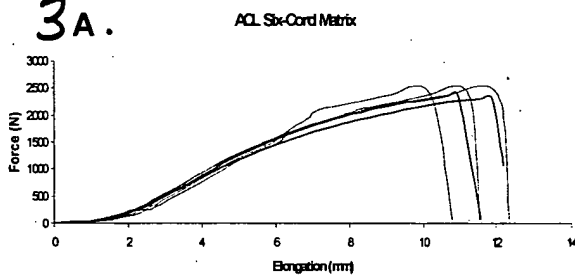
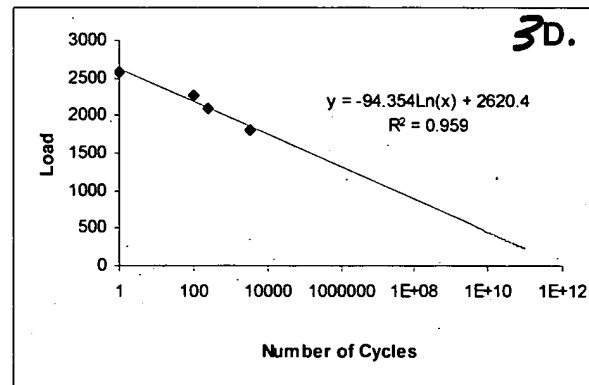
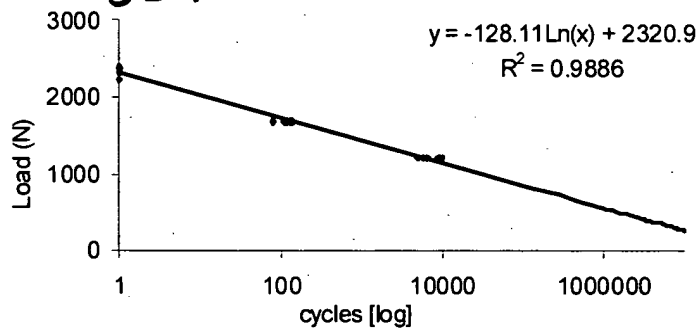


Figure 3

3A.



3B.



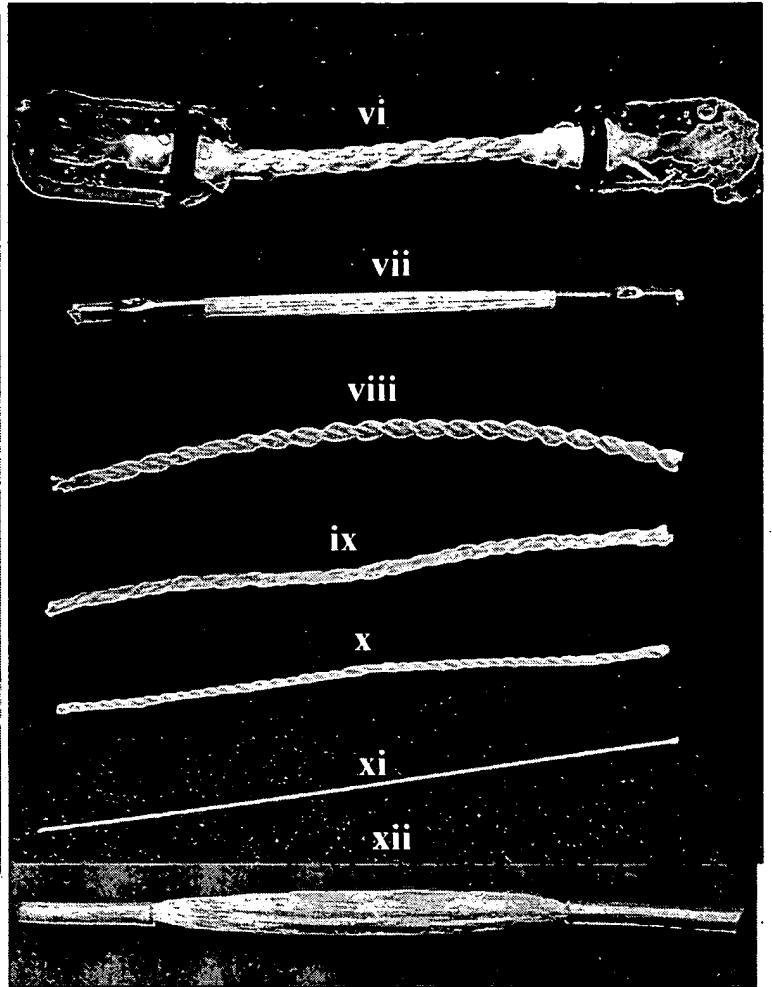
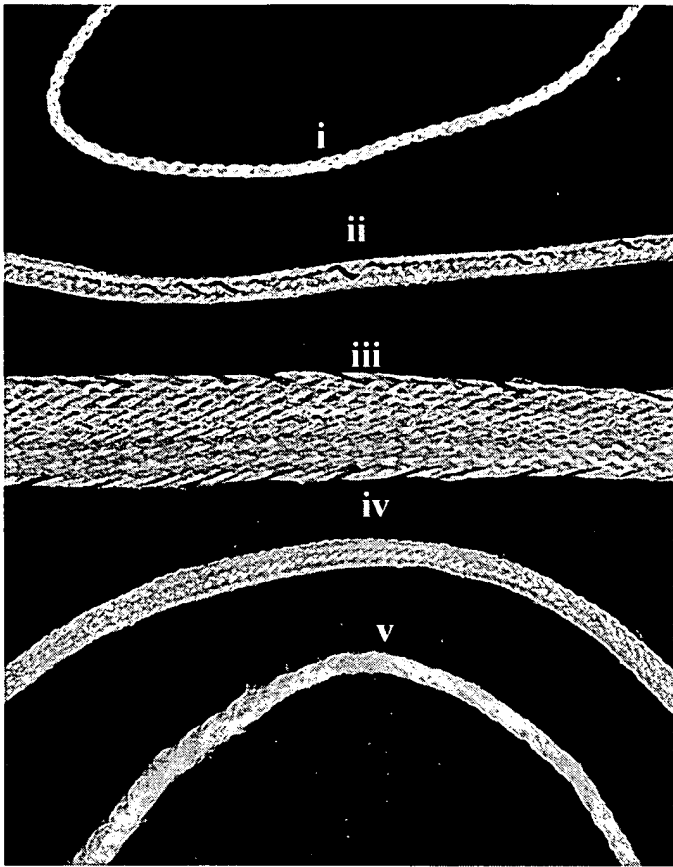


Fig. 4A

Fig. 4B

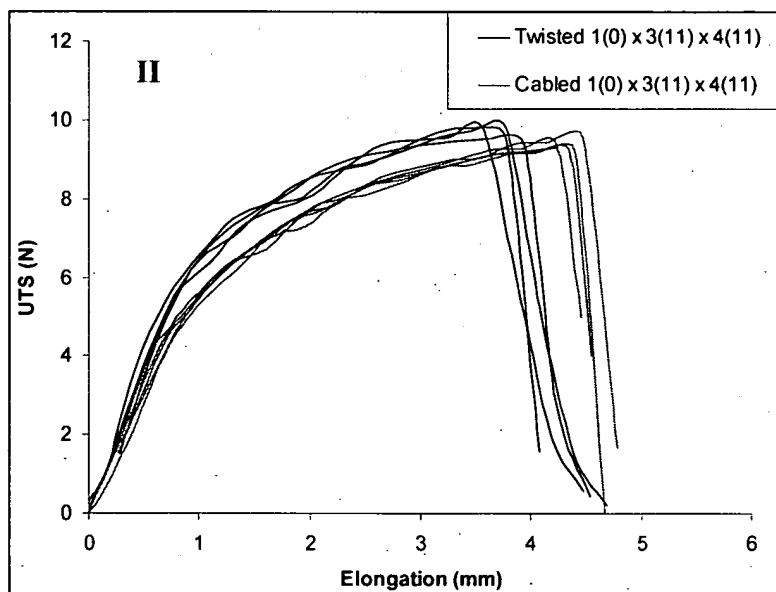
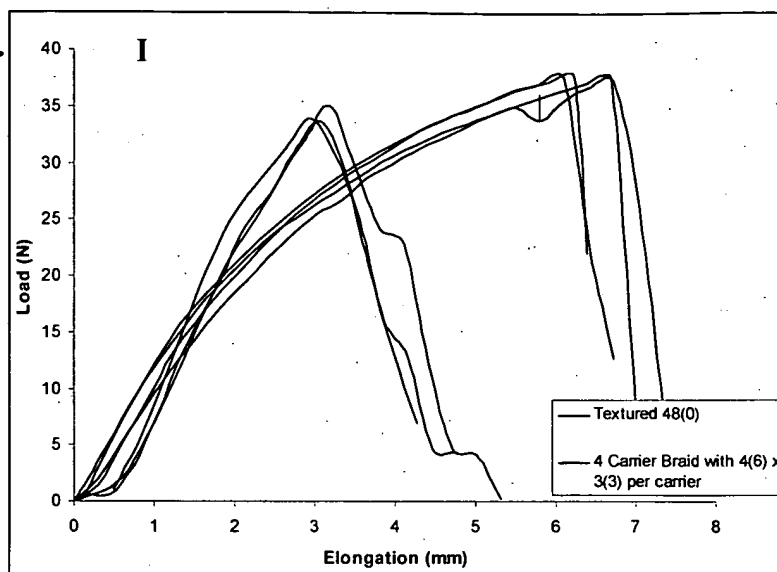
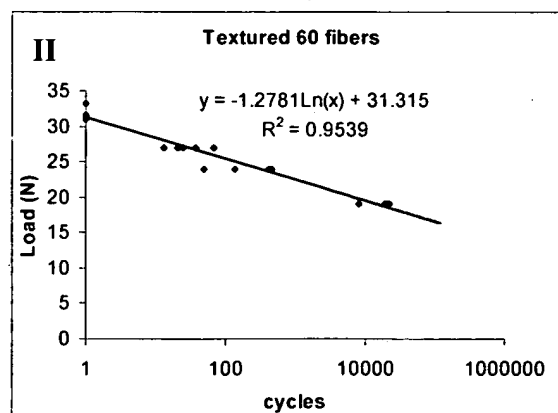
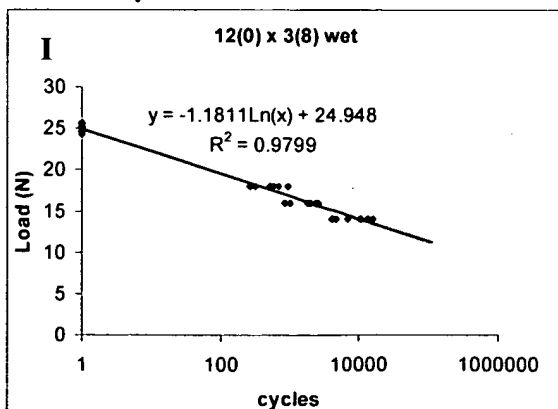


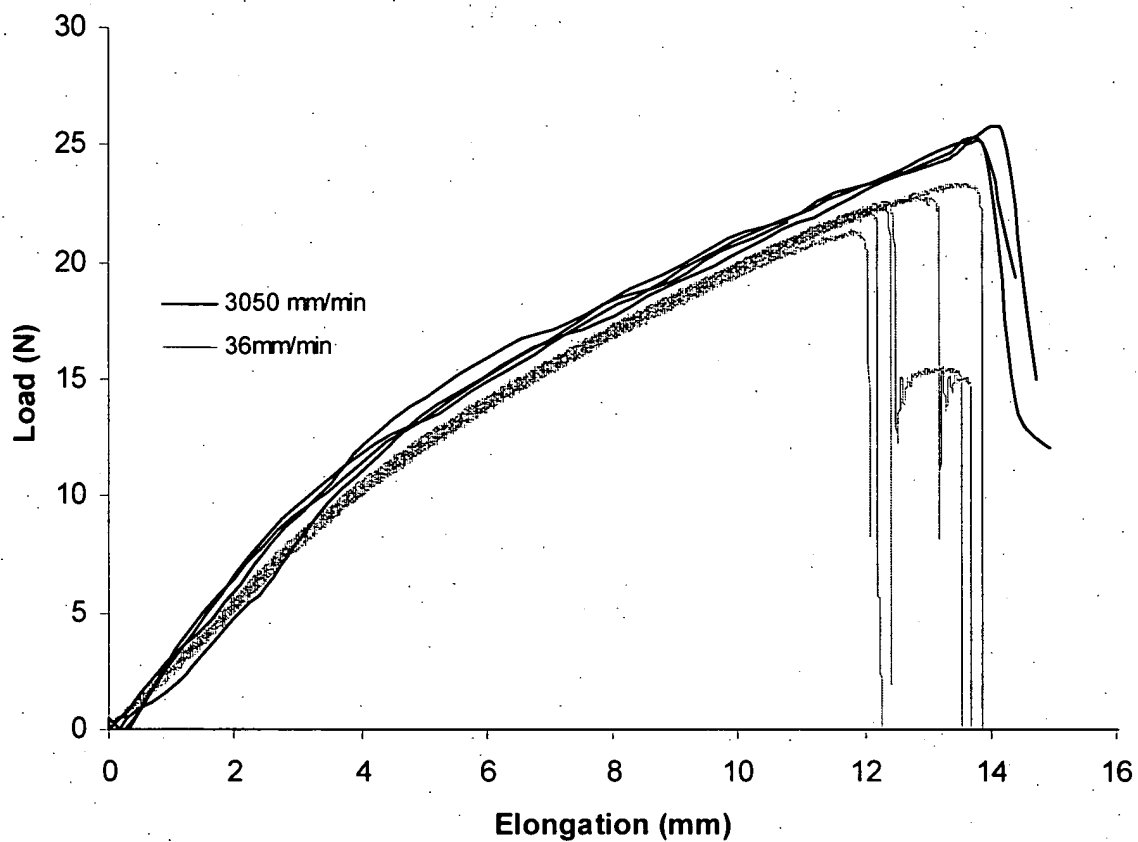
Fig. 4C



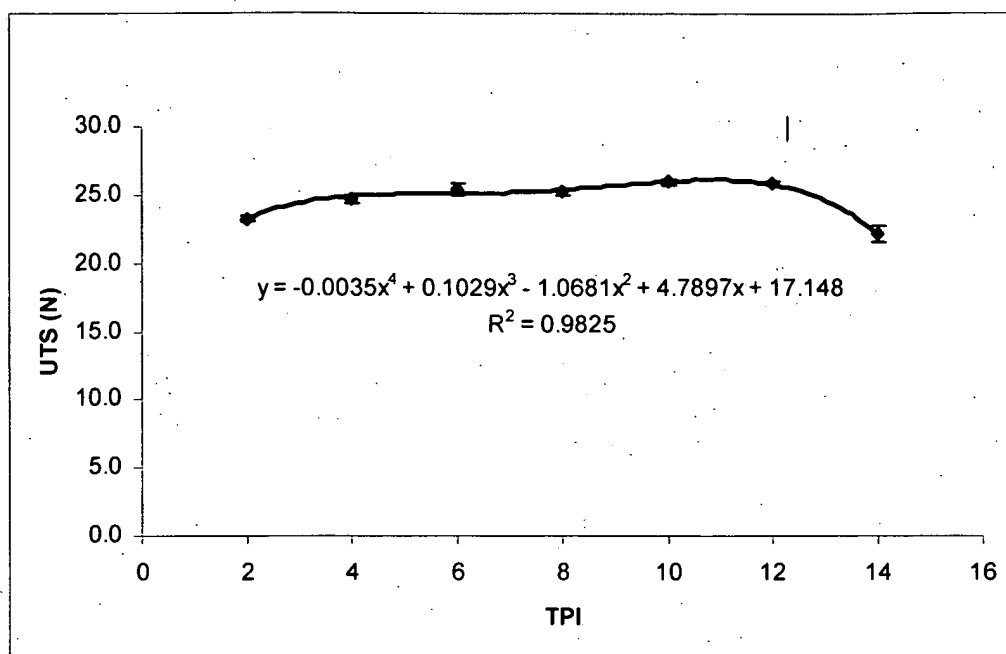
**Figure 5A** (all done on 12(0) x 3(8), extracted and wet)

Strain Rate (mm/min)	UTS (N)	stdev (N)	Stiffness (N/mm)	stdev (N/mm)
3050	24.9	0.60	3.70	1.04
2700	25.0	0.86	3.47	0.40
900	24.3	0.50	3.02	0.12
36	22.5	0.70	2.74	0.08

**Figure 5B**



**Figure 6A**



**Figure 6B**

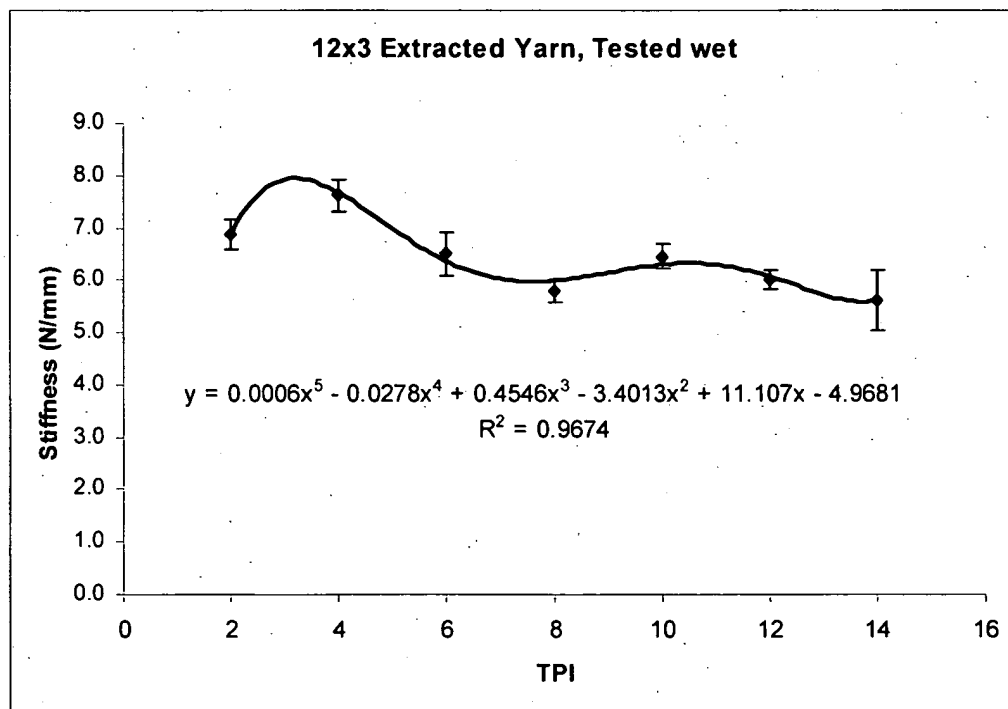




Figure 7

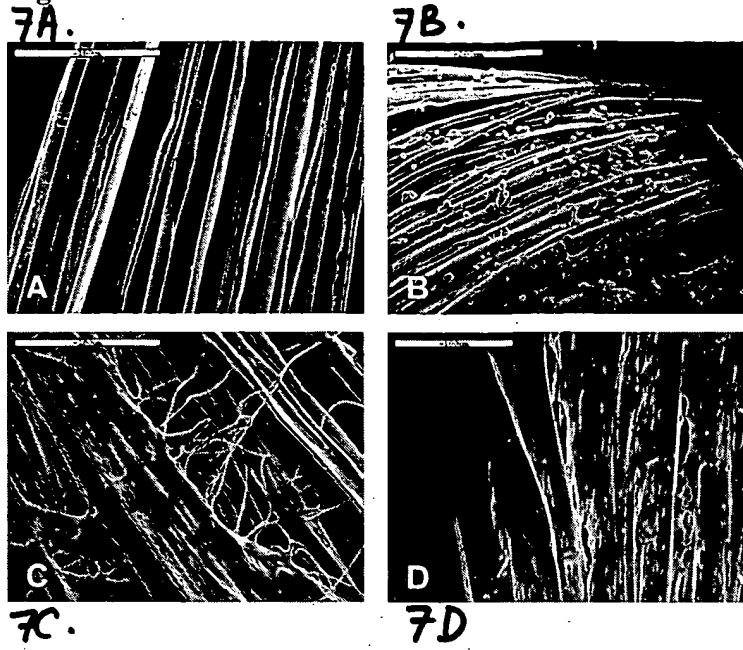


Figure 8

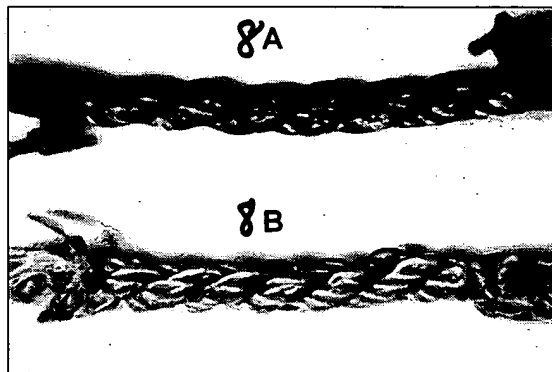
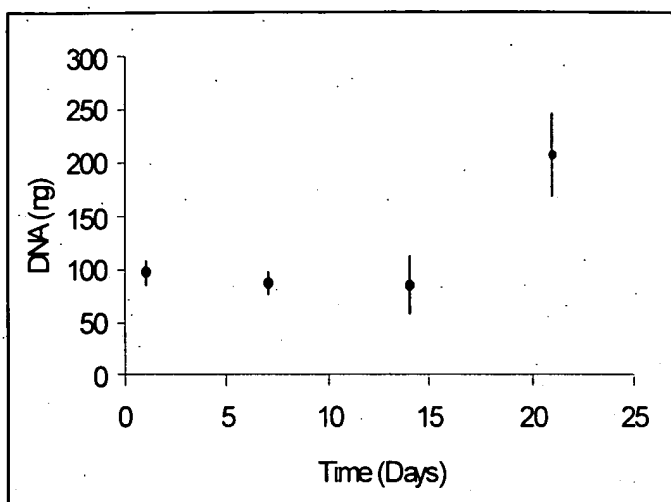


Figure 9

9A.



9B.

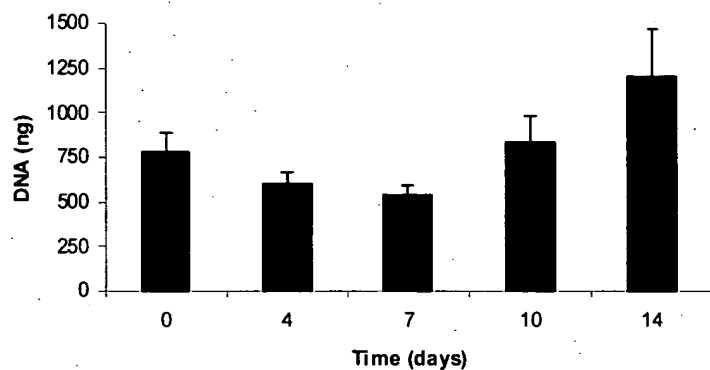


Figure 10

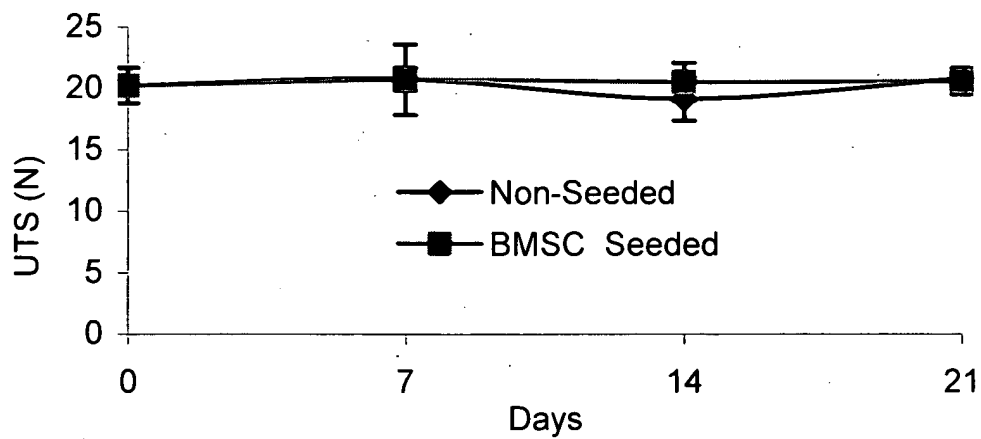


Figure 11A

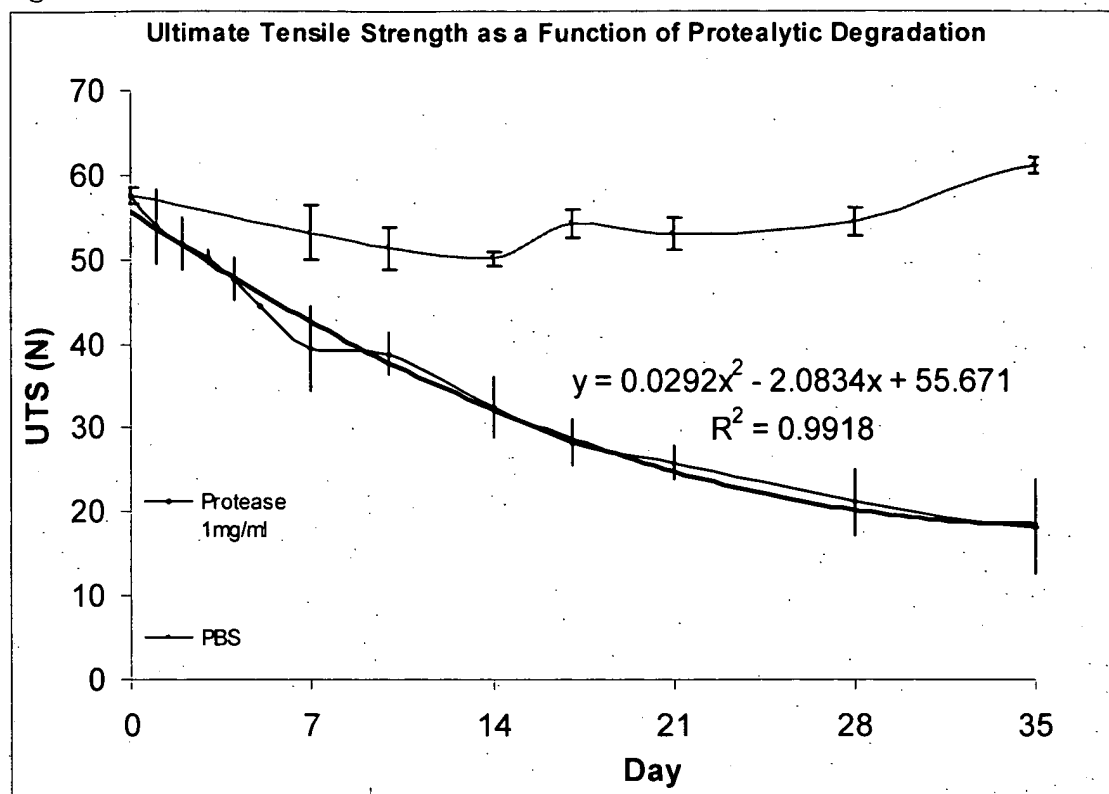
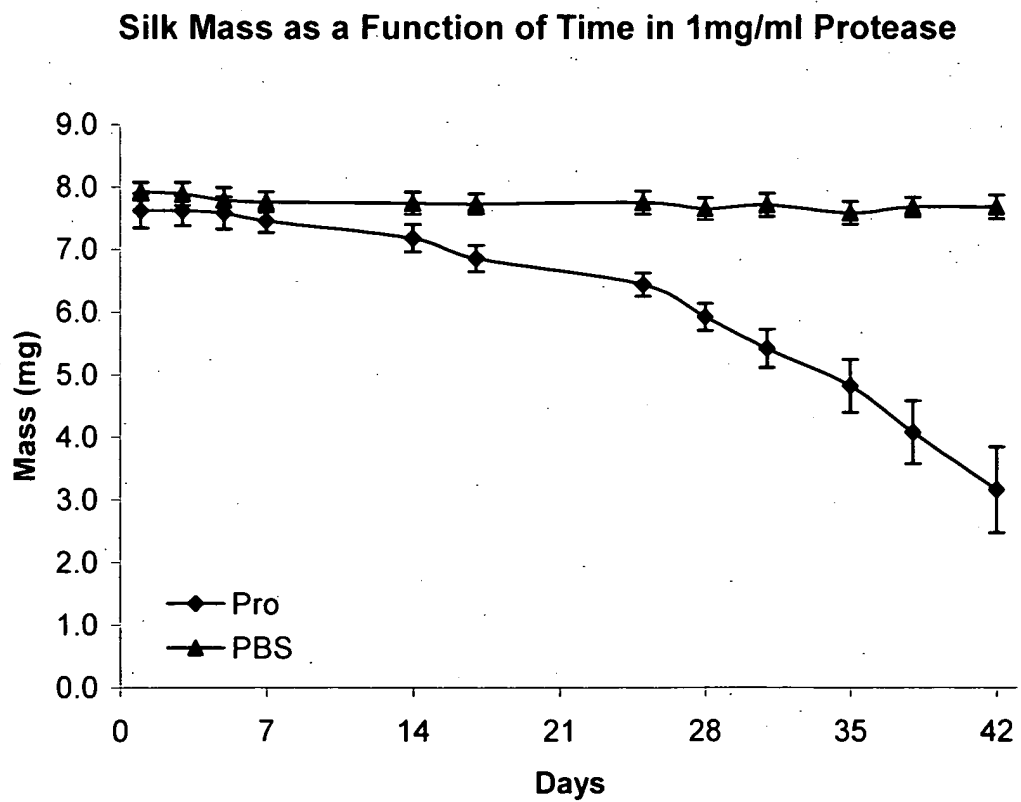
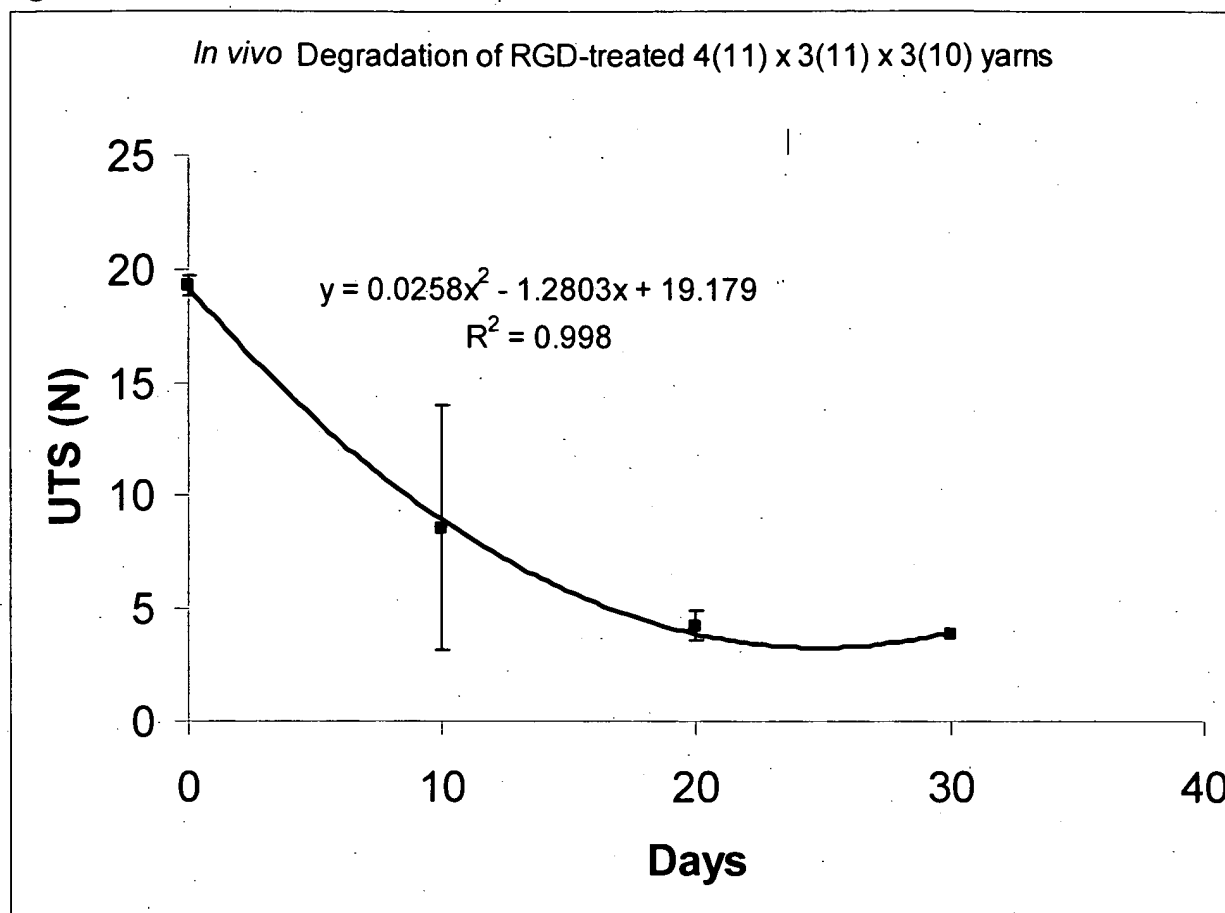


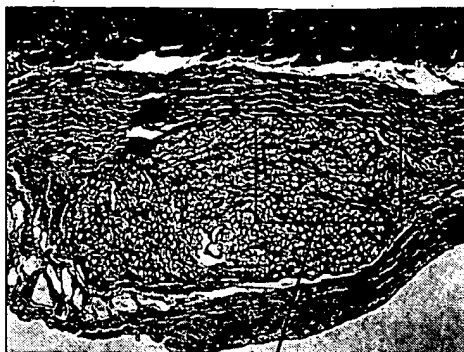
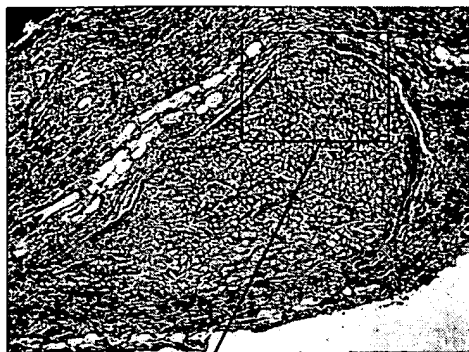
Figure 11B



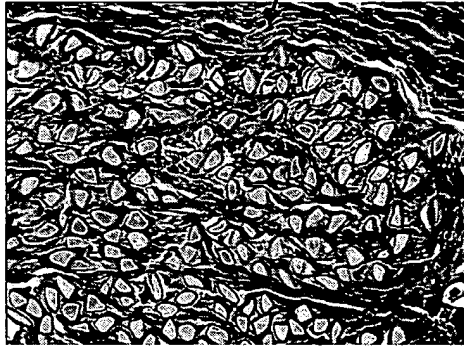
**Figure 12**



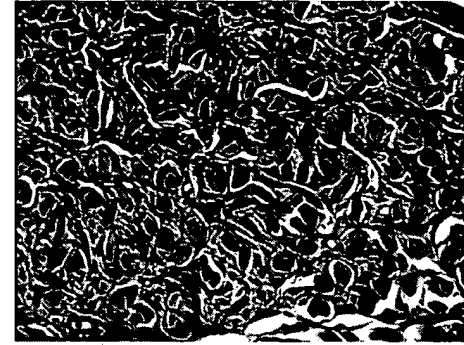
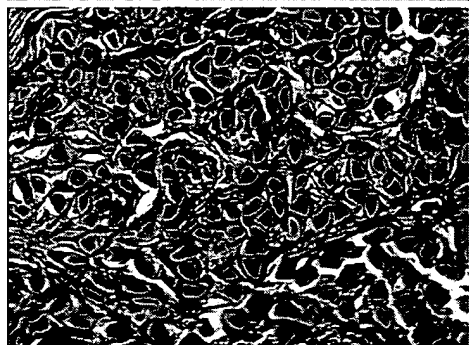
I



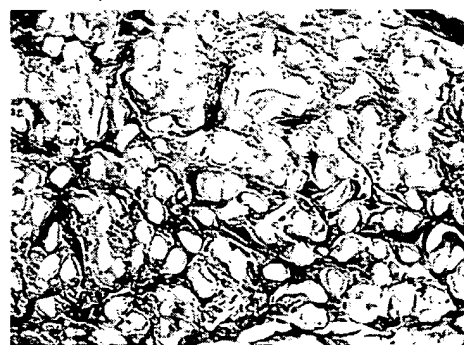
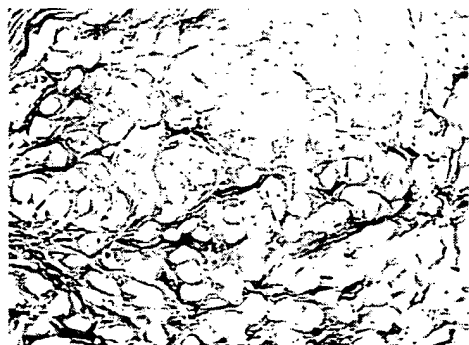
II



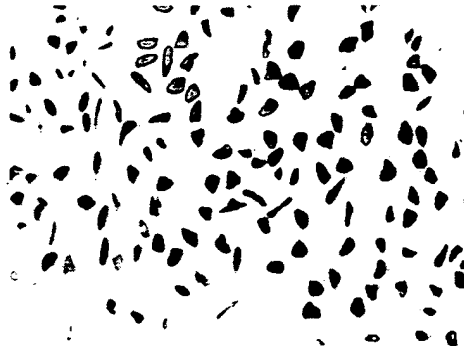
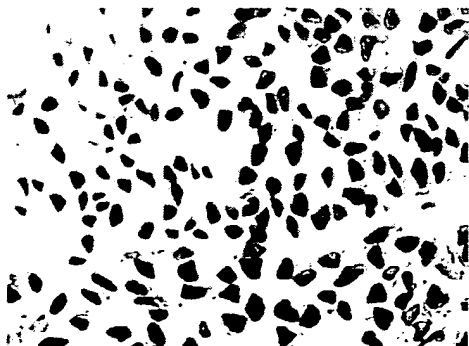
III



IV



V



Non-treated

RGD-modified

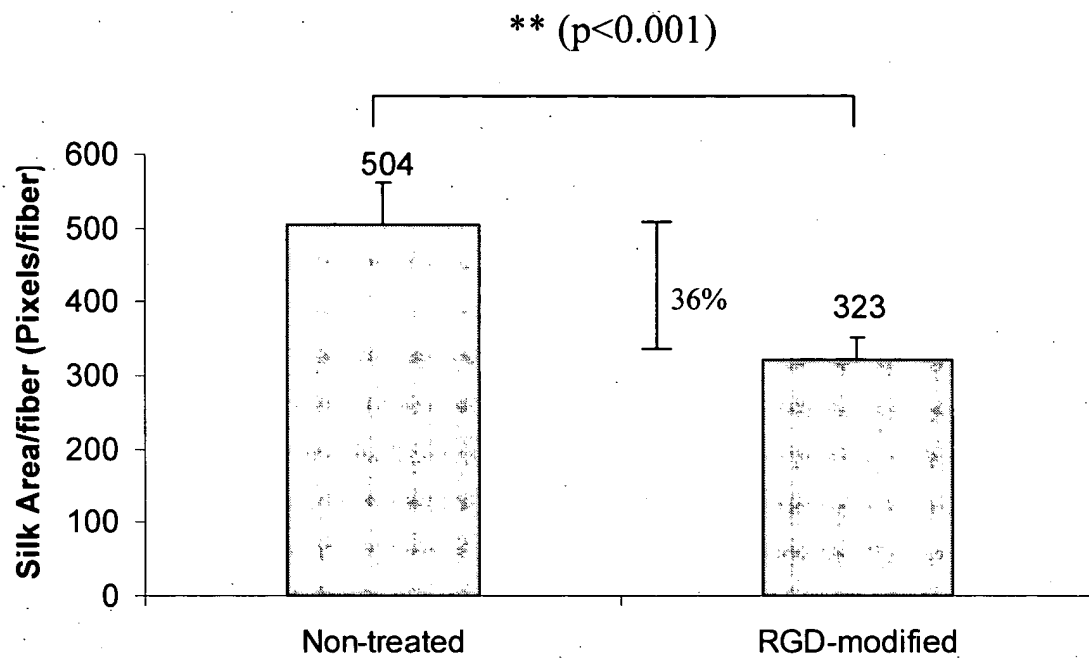
Fig.  
13A.

Collagen

Silk fiber

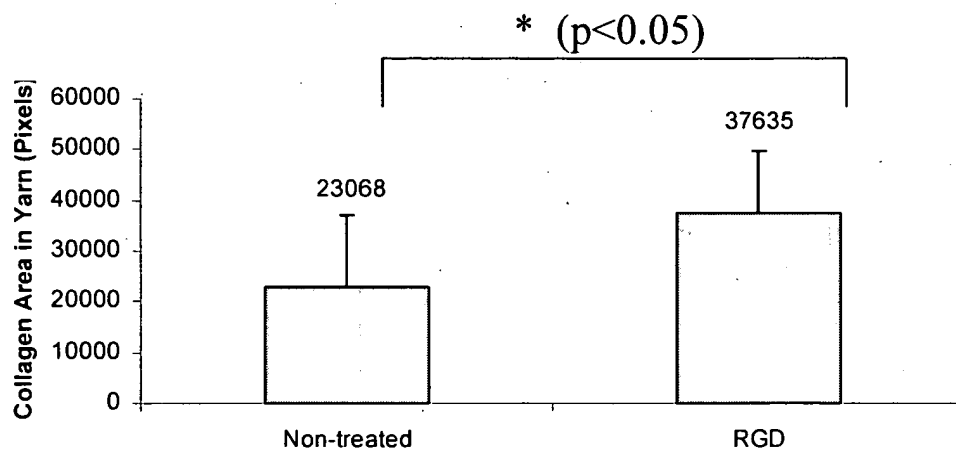
**Figure 13B**

Silk fiber cross-sectional area measurements after 30 days of subcutaneous implantation in a rat



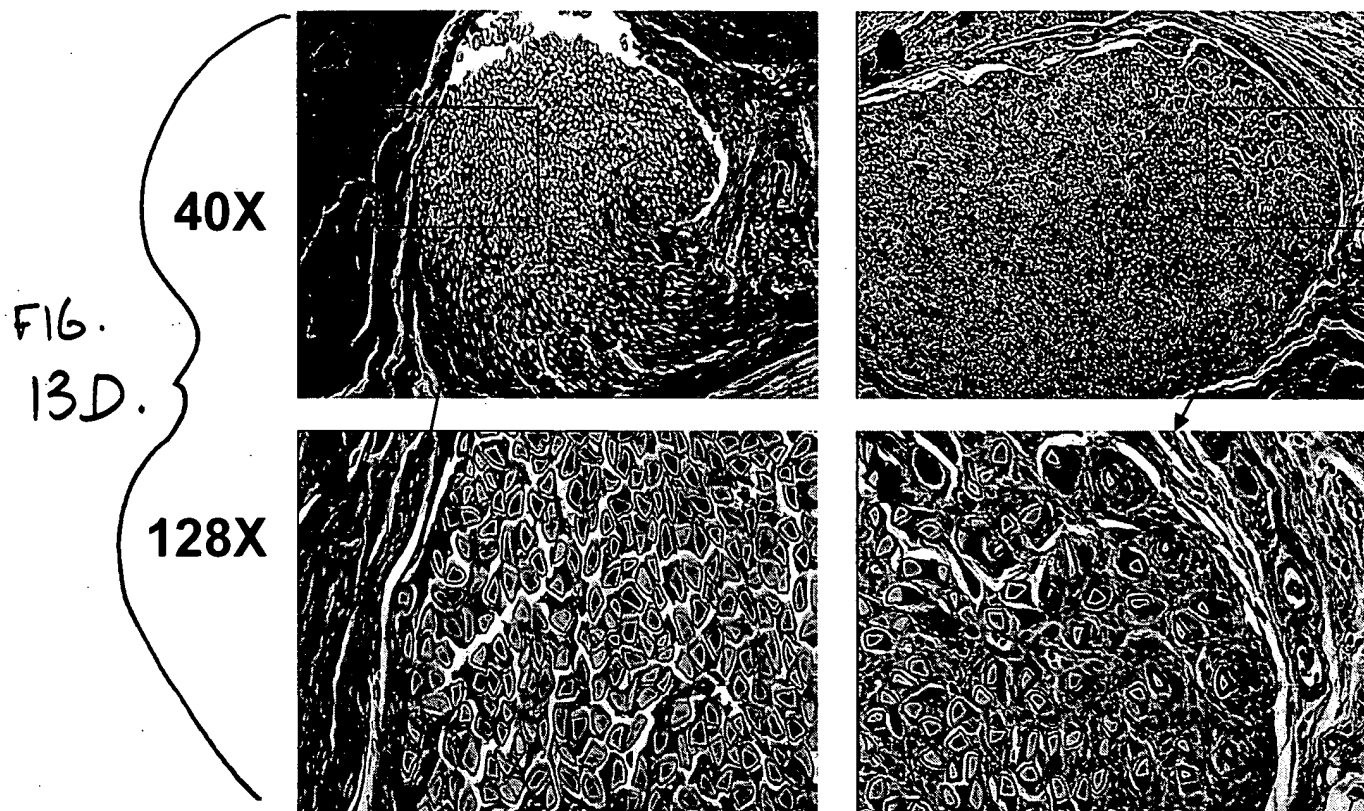
**Figure 13C**

Collagen deposition within 36-fiber yarn after 30 days *in vivo*.



**Figure 13D**

Intra-muscular implantation of 4(6) x 3(3) x 6(0) for 30 days



Non-treated

RGD-modified

**Figure 13E**

Surface Treatment	Silk cross-sectional area (mm <sup>2</sup> )				Change from day 10 to day 90 (%)
	10 days		90 days		
Non-treated	0.000118		0.000115		2.5
N <sub>2</sub> Plasma	0.000129		0.000096		25.6
RGD	0.000129		0.000082		36.4

Figure 14

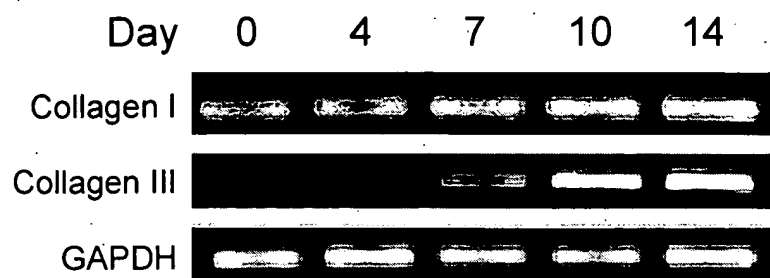
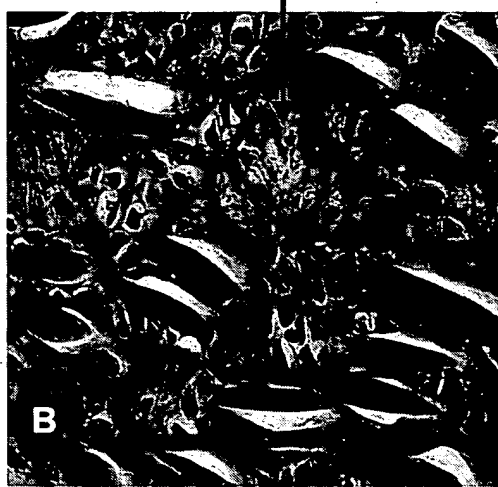


Figure 15

Matrix 1 fibroin fiber

Progenitor Host Cells

Collagen Ingrowth



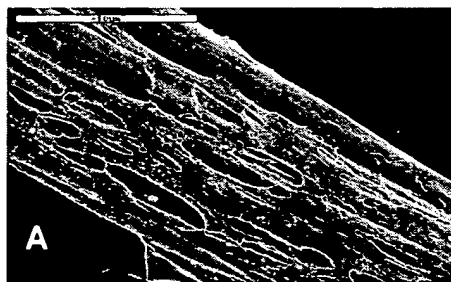
Hematoxylin and eosin staining of rabbit reconstructed MCL after 6 weeks.

15A

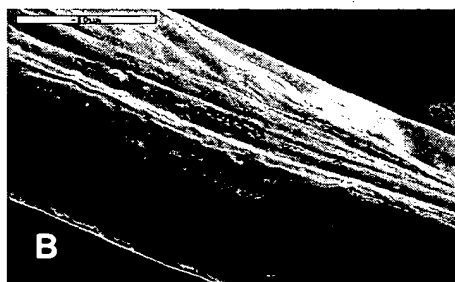
C15B

Trichrome

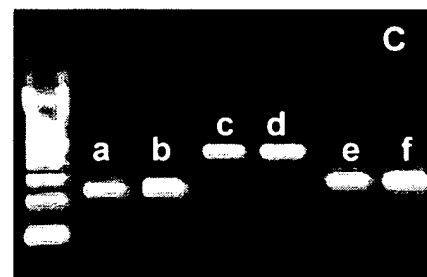
Figure 16



16A



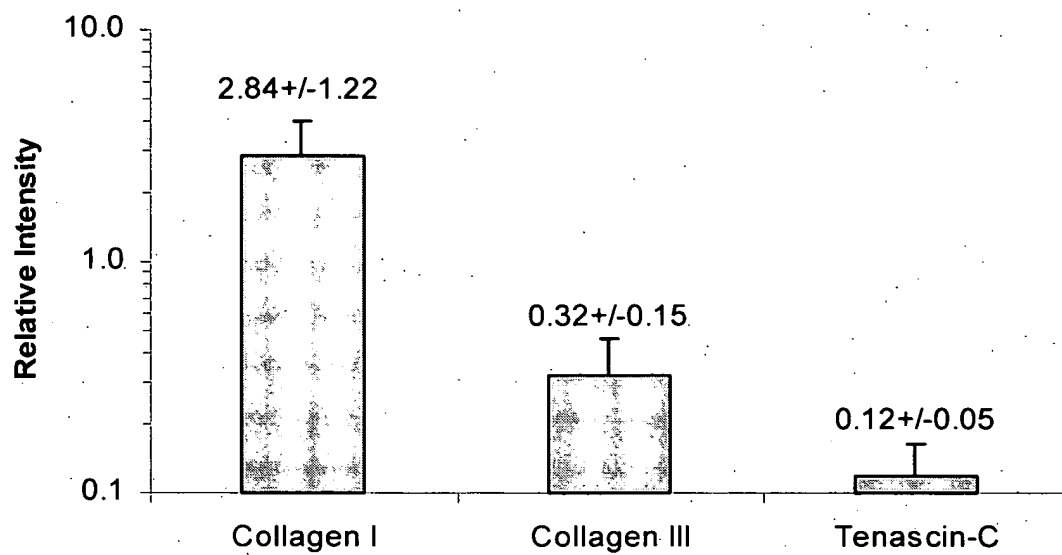
16B



16C



**Figure 17**



**Figure 18**

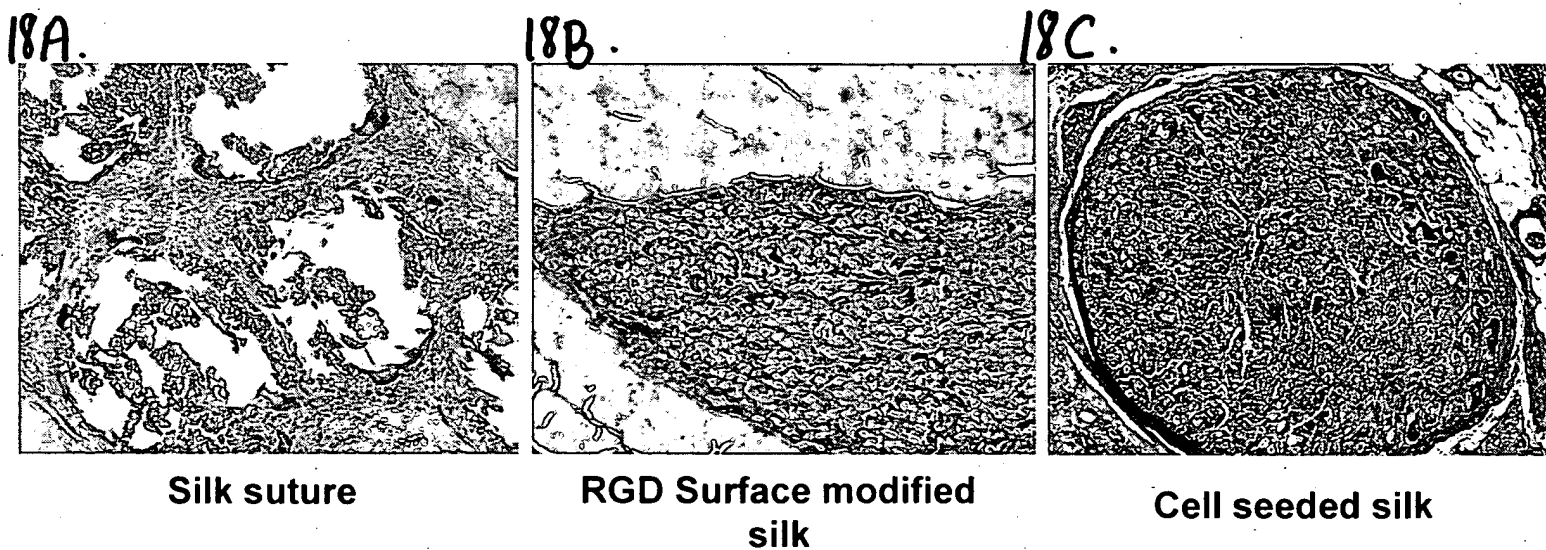


Figure 19

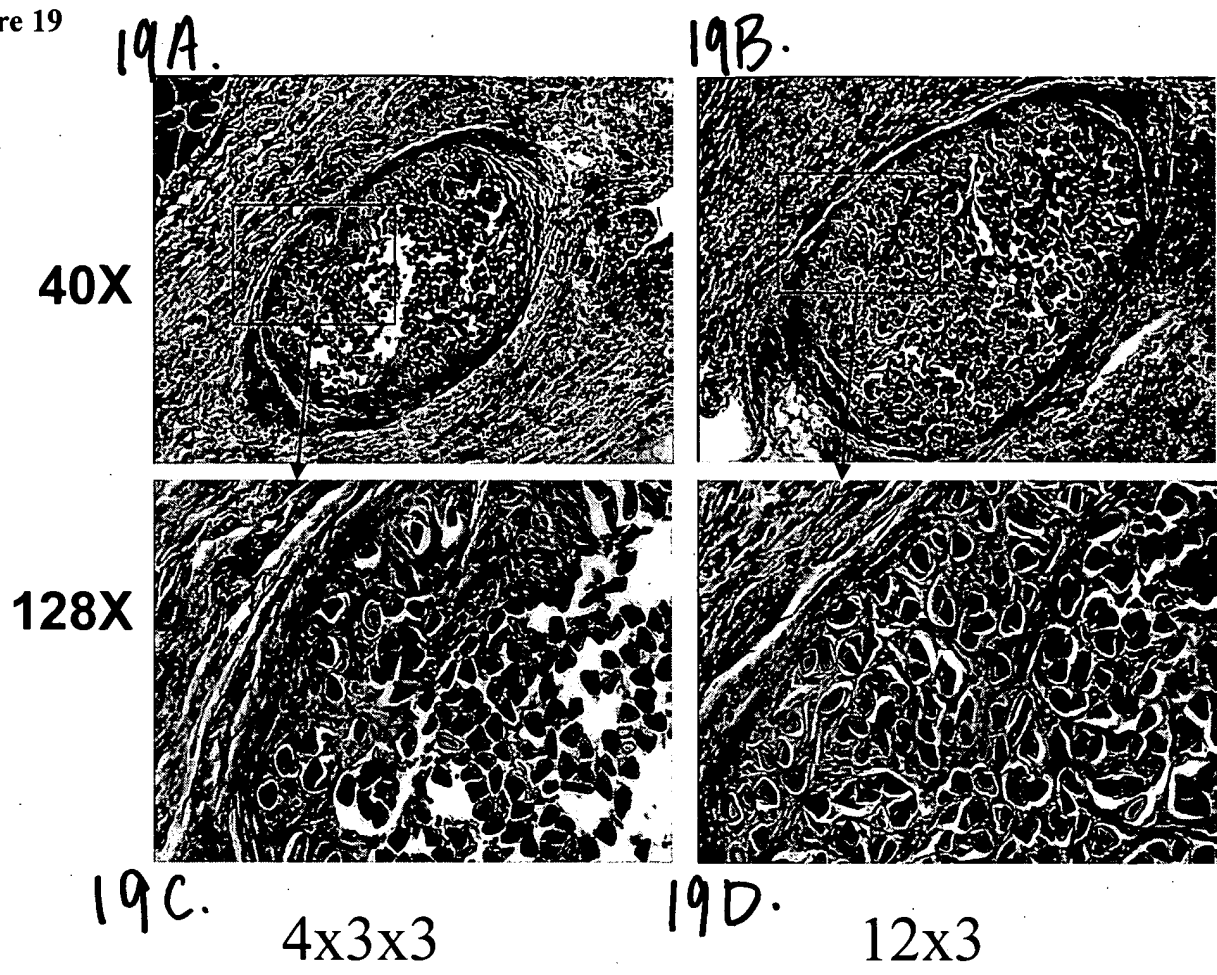
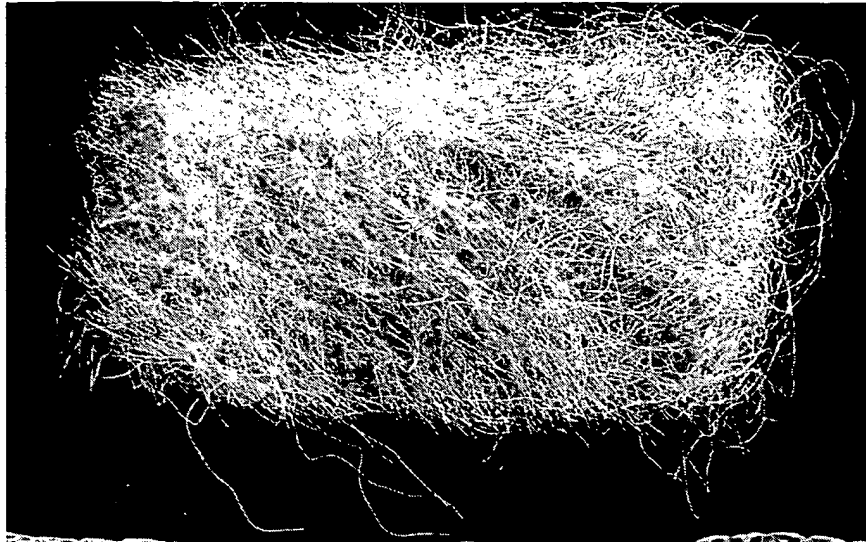
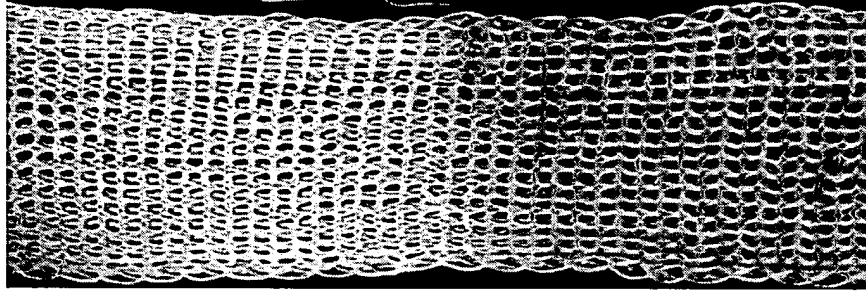


Figure 20

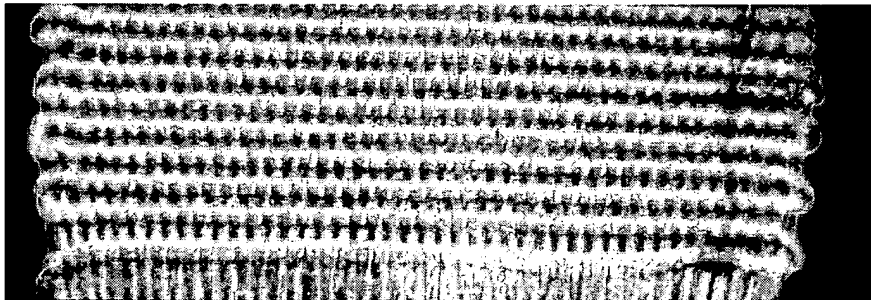
20A.



20B.



20c.



## Figure 21

